

NOAA's National Weather Service

NWS Update: "Working Together To Save Lives"

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for Meteorology, Oceanography and Hydrology

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Overview

- **2003 Highlights**
- **Where We Are Going**
- **Challenges and Opportunities**

2003 Highlights

Significant U.S. Weather, Water, and Climate Events

WILDFIRES

Active Wildfire Season in West:
More Than 3.8 Million Acres Burned
in U.S. Major Centers of Activity
Were California, Northern Rockies
and the Southwest

TORNADOES

Record Outbreak of Tornadoes in
May. 516 tornadoes for the month

FLOODING

Flash Flooding in February in
Eastern Kentucky

SNOW & ICE

Major Snow Events in February
& December for the Northeast
and Parts of the Mid-Atlantic

HURRICANE ISABEL

Hurricane Isabel Made Landfall in
North Carolina in September
First Landfall Hurricane on East
Coast Since 1999
New 5-day Hurricane Forecast
Product

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2003 Highlights

NWS National Performance Measures

FY 2003 – FY 2008

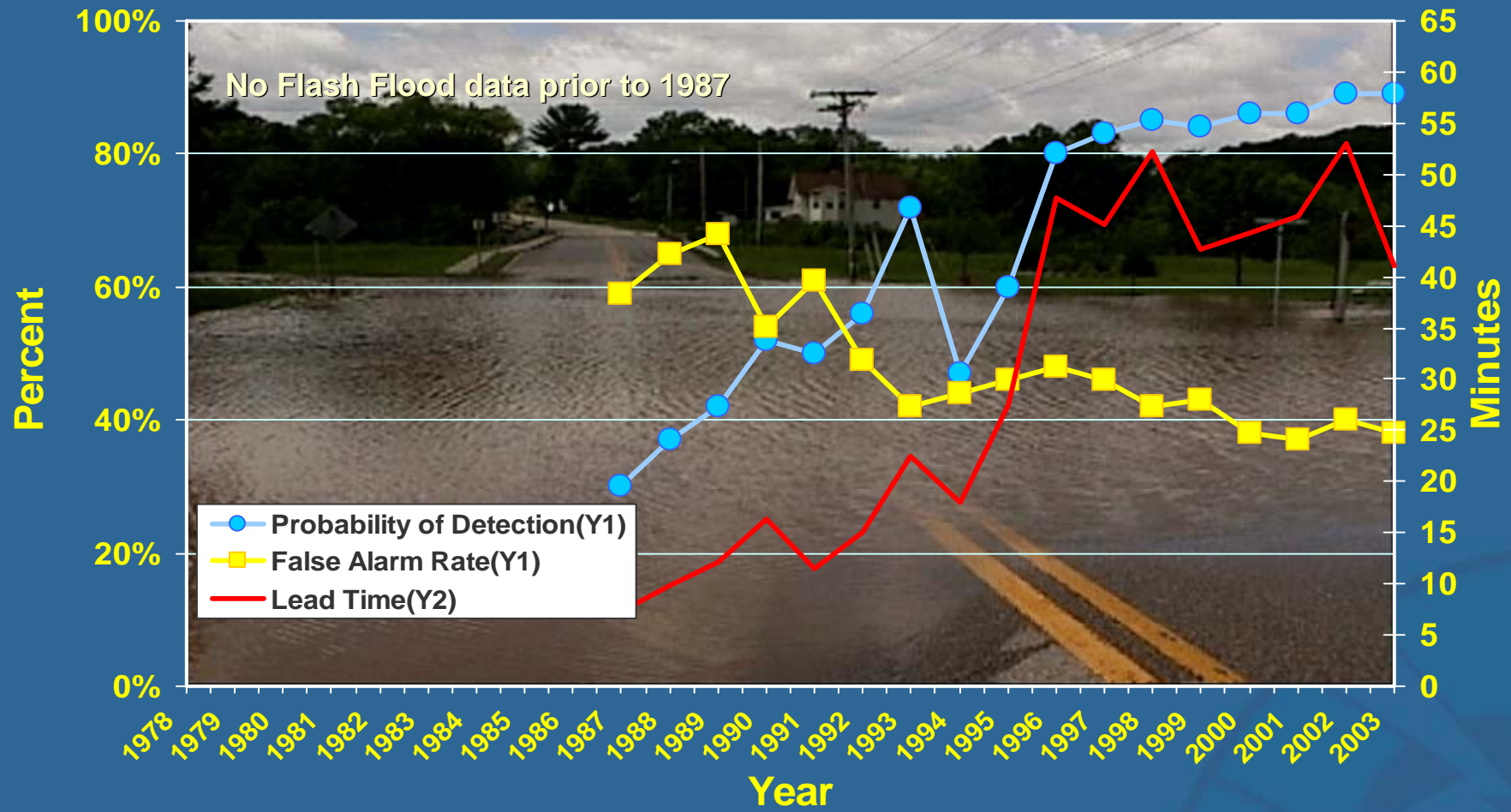
Government Performance Requirements Act (GPRA) Performance Measure	Goals	Actual	Goals				
	2003	2003	2004	2005	2006	2007	2008
Tornado Warnings - Accuracy (%)	76	79	72	73	73	74	76
Tornado Warnings - False Alarm Rate (%)	73	76	70	69	68	68	68
Tornado Warnings - Lead Time (Min)	12	13	12	14	15	15	15
Flash Flood Warnings - Accuracy (%)	89	89	89	90	90	90	90
Flash Flood Warnings - Lead Time (Min)	53	41	52	54	56	58	58
Winter Storm Warnings - Accuracy (%)	90	90	89	90	90	90	90
Winter Storm Warnings - Lead Time (Hours)	13	14	14	15	15	15	15
Aviation Forecasts (Ceiling & Visibility) - Accuracy (%)	45	48	46	47	47	49	49
Aviation Forecasts - (Ceiling & Visibility) False Alarm Rate (%)	71	64	70	68	68	67	66
Hurricane Track Forecasts (48 Hours Fcst Error (RMS))	130	107	129	128	128	126	126
U.S. Seasonal Temperature – Skill	18	17	21	22	22	23	23
Precipitation Forecast – Day-1 Threat Score (%)	30	27	25	26	26	27	27
Marine Wind Speed Forecasts - Accuracy (%)	52	57	54	54	56	57	58
Marine Wave Height Forecasts - Accuracy (%)	68	71	66	68	68	70	70

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2003 Highlights

Performance

Flash Flood Warnings

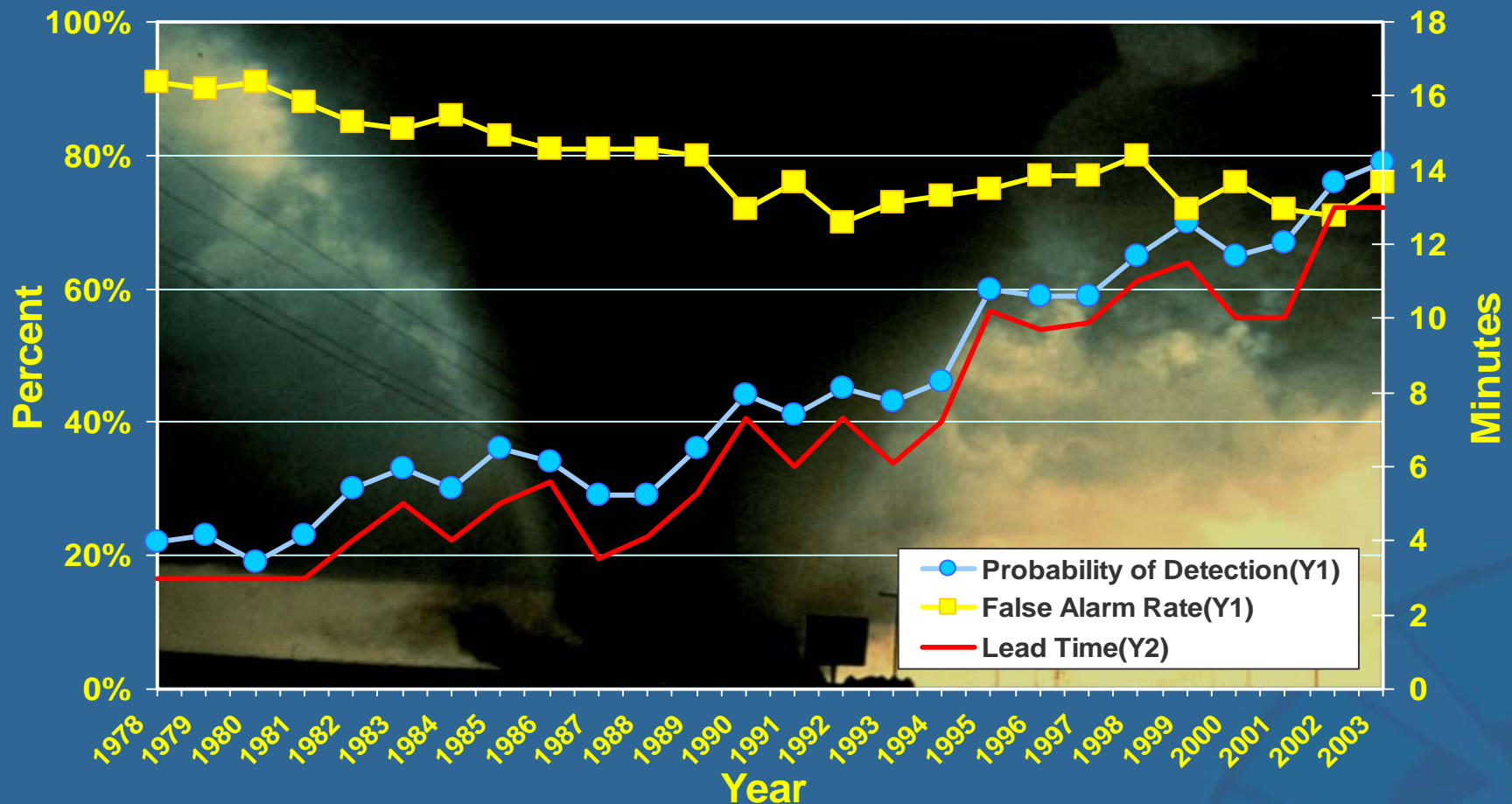


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2003 Highlights

Performance

Tornado Warnings

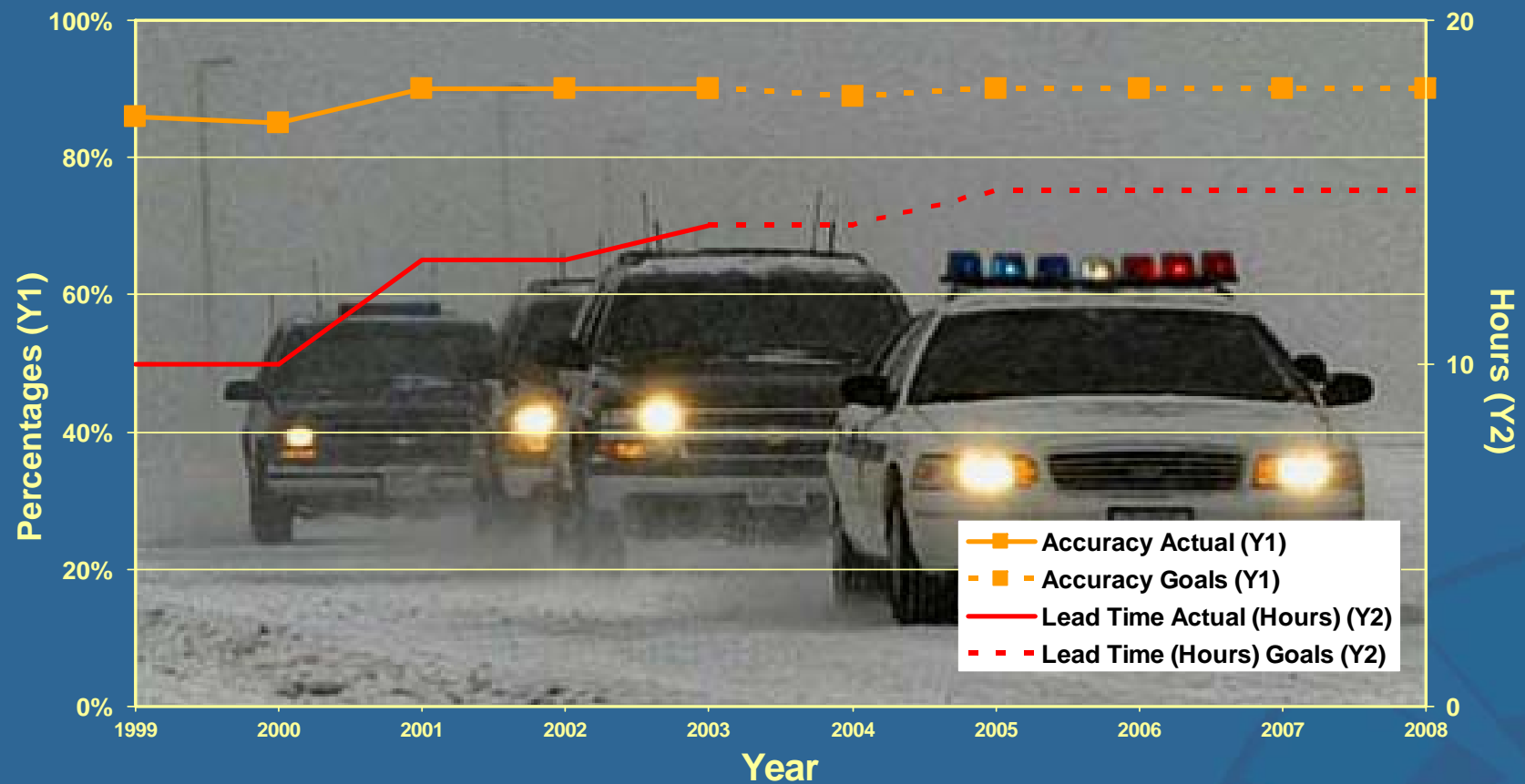


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2003 Highlights

Performance

Winter Storm Warnings



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2003 Highlights

Performance

Hurricane Track Forecasts (48Hrs)



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2003 Highlights

Customer Service

Gauging Customer Satisfaction

- **NWS (2003) surveyed prominent customer segments**
 - *Media*
 - *Emergency Managers*
 - *Aviation*
 - *Marine*

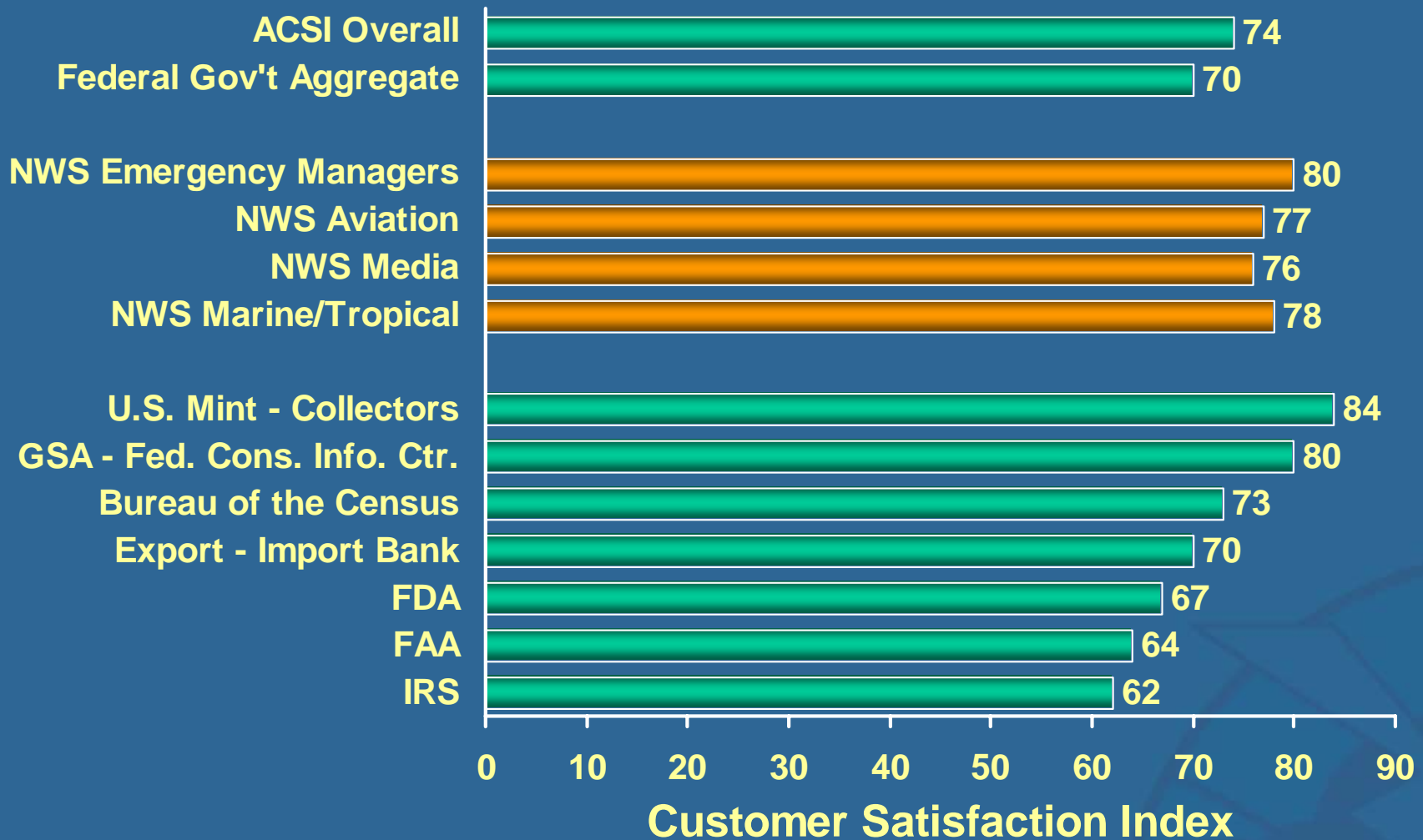


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2003 Highlights

Customer Service

And the Survey Says.....



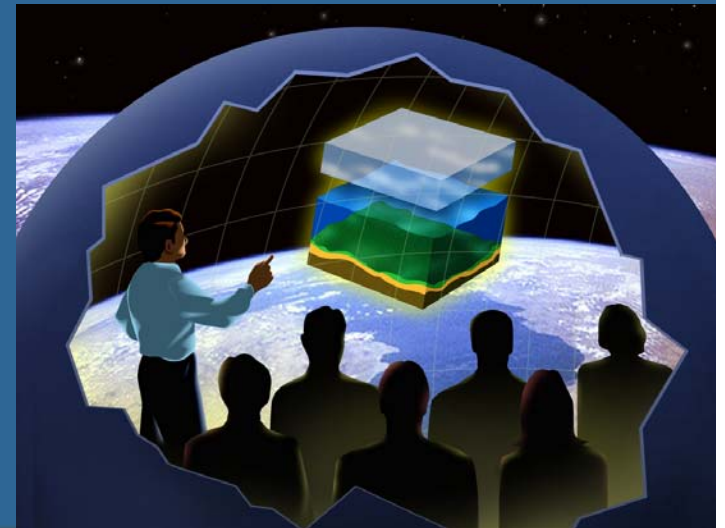
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2003 Highlights

Interactive Forecast Preparation System (IFPS) and National Digital Forecast Database (NDFD)

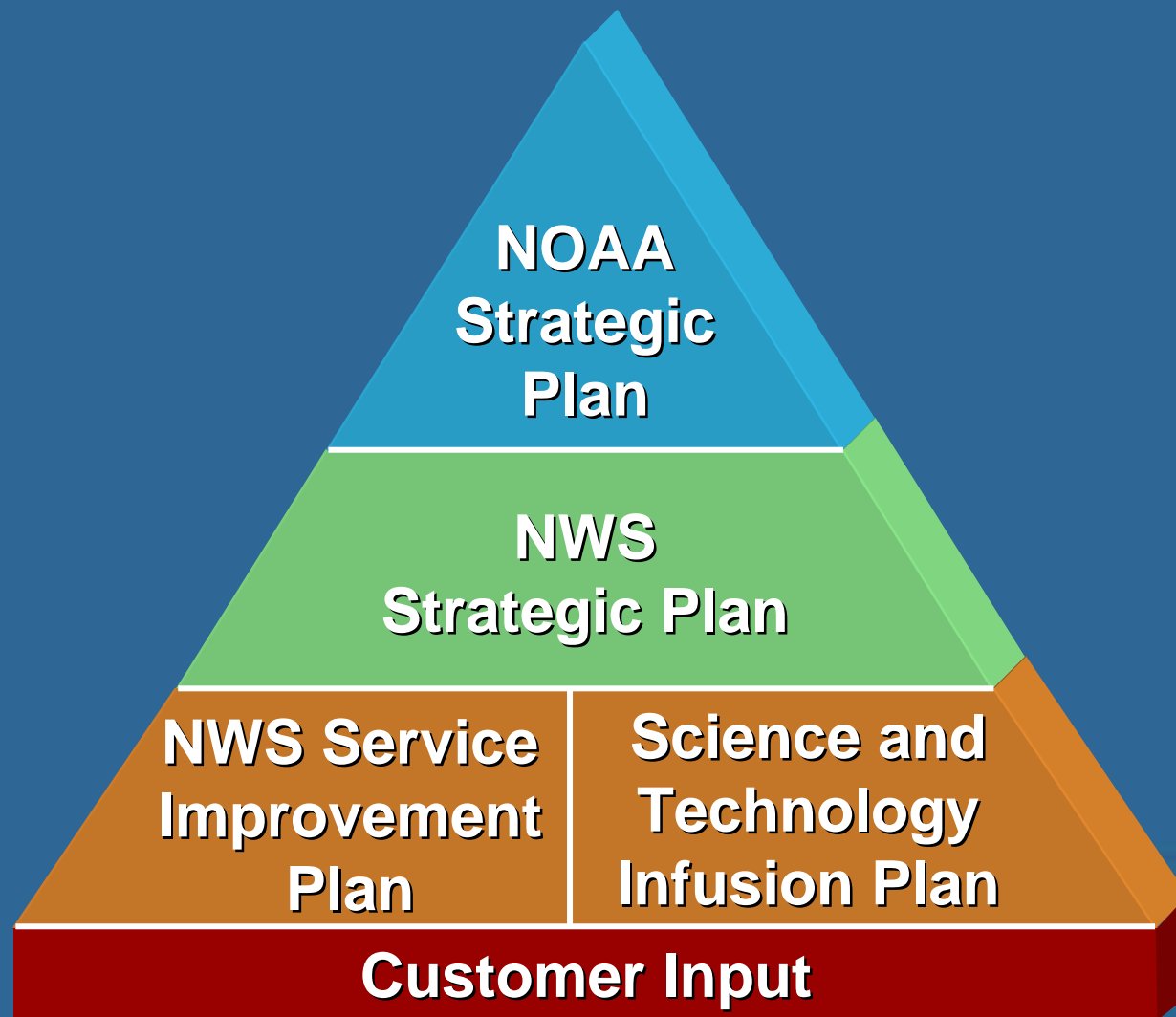
- **Accomplishments:**

- *Implemented IFPS on schedule September 30, 2003, for CONUS.*
- *Implemented the NDFD in experimental mode.*
- *Started providing public access to gridded forecasts.*



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Where We Are Going



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Where We Are Going

Science and Technology Infusion

Science & Technology Advances

- Observations (More Frequent, More Detailed)
- Data Assimilation (Satellites, Radar)
- Computing Capability (Advanced Physics, Finer Resolution Models)
- Dissemination Methods
- Forecaster Techniques
- New Products



Results

Hurricane Track, Intensity and Precipitation Forecasts

Tornado and Flash Flood Forecasts

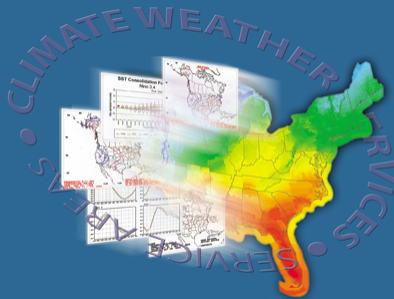
Aviation, Fire, and Marine Forecasts

Flood and River Predictions

Seasonal Climate Forecasts for Energy, Agriculture, Etc.

Where We Are Going

NWS Service Improvement Plan



- Aviation
- Climate
- Digital Services
- Water Resources
- Fire Weather
- Marine
- Observations



Where We Are Going

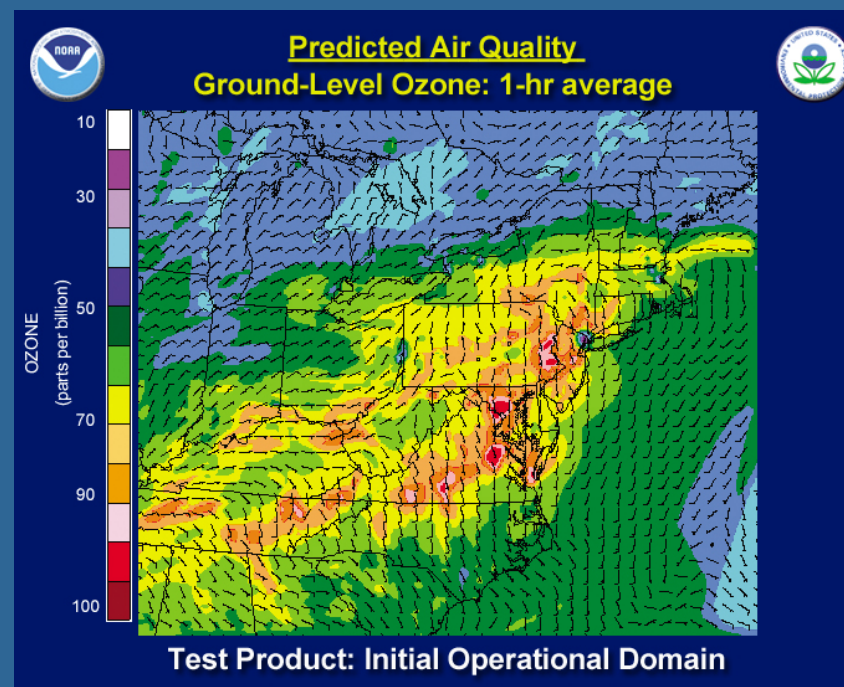
National Air Quality Forecasting

Lives and property at risk from poor AQ

AQ Forecast guidance produced 2 times daily

Phased Deployment

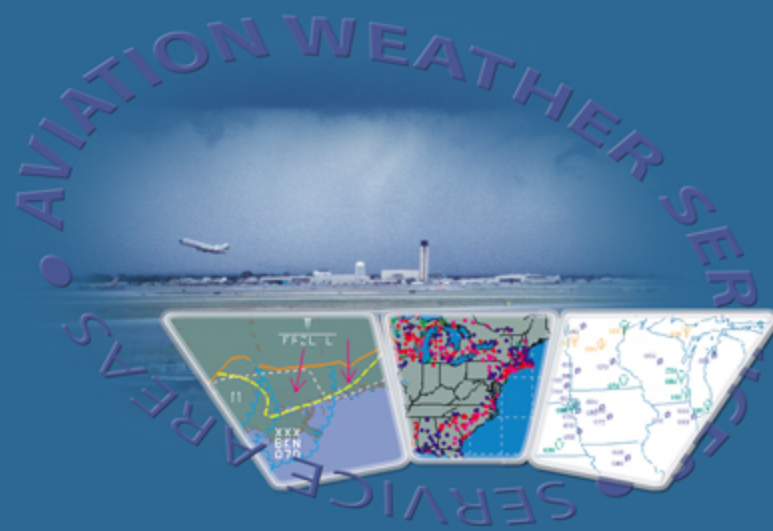
- September, 2004: Northeastern US, next-day, ozone
- Five years: Nationwide coverage; begin particulates forecasts



Where We Are Going

Aviation Services

- AWIPS-based Aviation Forecast Preparation System (AVNFPS) version 1.0 released Fall 2003
- Collaborative Convective Forecast Product improvements scheduled for 2004
- Second Distance Learning Aviation Course on short term convective weather forecasting schedule late 2004
- Developing operational Graphical Area Forecast production capability



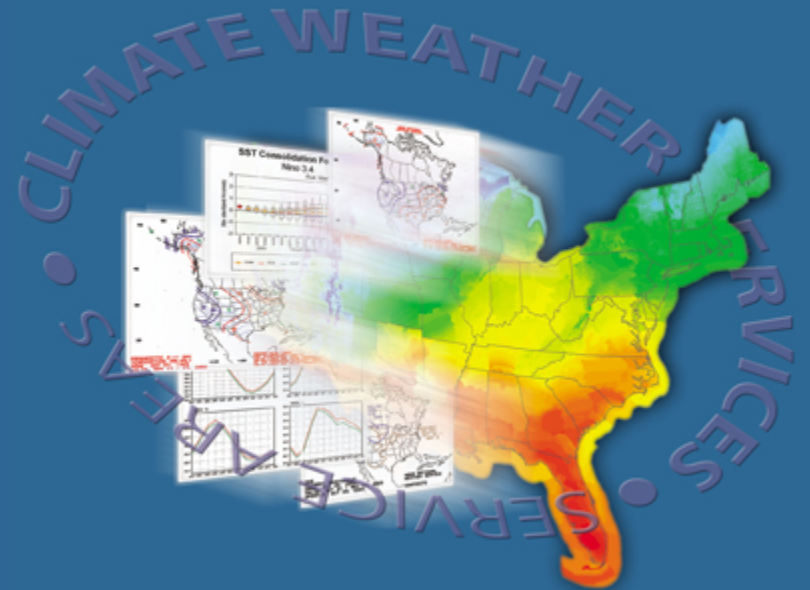
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Where We Are Going

NWS Evolving Role in Climate

Changing the Way We Do Business:

- *Managing observing system to ensure the integrity of the climate record*
 - Overlapping observations for all future observing system changes to minimize biases
- *Building nationwide infrastructure for delivery of Climate Services*
 - Mobilizing regions and field
 - Developing partnerships
 - Developing new products and services

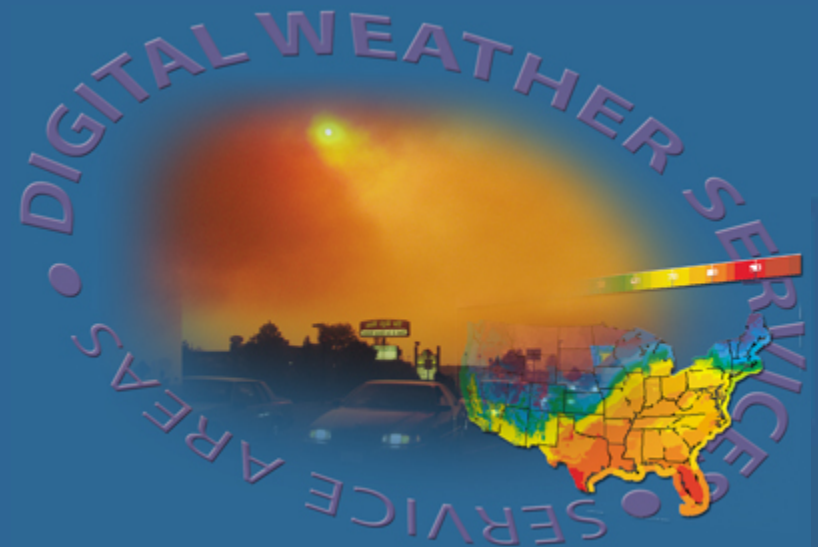


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Where We Are Going

Digital Services

- Implement IFPS and NDFD for Alaska and Pacific regions in 2004
- Transition NDFD from experimental to operational
- Initiate a comprehensive verification program for digital forecasts
- Improve quality of gridded forecasts



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Where We Are Going

Water Resources

- Leverage current NOAA-wide assets to develop and deploy a full suite of water resource information
- Integrate and enhance NOAA's collaborative research, data, and operations for:
 - *fresh water*
 - *estuary-fresh water transition zone*
 - *estuary-ocean zone*



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Where We Are Going

Fire Weather

- Integrate NWS gridded forecasts (NDFD and local databases) into fire agency applications
- Improve use of probabilistic forecast information for fire agency decision making
- Produce national verification for fire weather

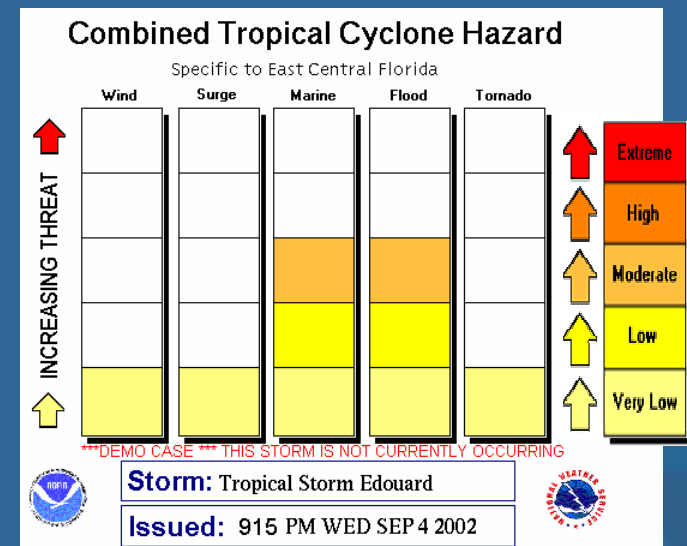
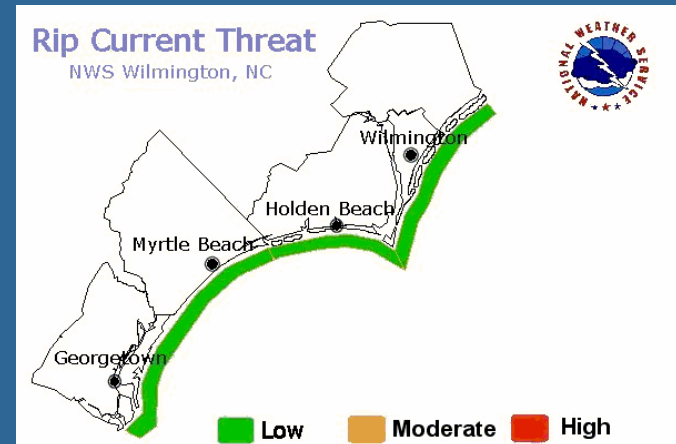


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Where We Are Going

Marine Weather

- Graphical Rip Current Outlooks
- Graphical Hurricane Local Statements
- Integrate NOS' PORTS data with weather information and forecasts



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Where We Are Going

Observations

- Deploy up to 200 modernized COOP sites in New England, spring '04
- NWS using snow-paid observers to measure and report snowfall at 114 Local Climatological Data stations this winter season
- Complete deployment of 102 replacement radiosonde ground stations and the new GPS radiosonde by the end of FY '07.



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Challenges and Opportunities

- **Water Resources**
- **Climate**
- **Group on Earth Observations**
- **Oceans**
- **Partnerships**
- **All Hazards**